ABSTRACT

A novel and useful apparatus for and method of determining the channel order and channel estimate in a communications system such as a wireless communication system including cellular and cordless. These types of channels can be characterized by rapidly changing impulse response and their taps can be modeled as zero-mean, complex, Gaussian random processes. A sufficiently long, initial channel estimate of length is performed so as to ensure that the actual channel taps will be contained in the estimated taps thus making certain that the equalizer will effectively eliminate intersymbol interference. The channel estimate is performed during each burst using the training sequence transmitted in the middle of the burst. The tap energies are then averaged so as to track slow variations in the pattern of resultant channel taps. The noise floor is thus calculated using the lowest averaged taps. A threshold is computed and applied to the average taps. The channel order and the tap positions are then selected in accordance with the average taps above the threshold.

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